General

Guideline Title

Improving medication management for older adult clients.

Bibliographic Source(s)

Bergman-Evans B. Improving medication management for older adult clients. Iowa City (IA): University of Iowa College of Nursing, John A. Harford Foundation Center of Geriatric Nursing Excellence; 2012 May. 31 p. [117 references]

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Bergman-Evans B. Improving medication management for older adult clients. Iowa City (IA): University of Iowa Gerontological Nursing Interventions Research Center, Research Dissemination Core; 2004 Oct. 55 p. [135 references]

Recommendations

Major Recommendations

The grades of evidence (A1-D) are defined at the end of the "Major Recommendations" field.

Description of Practice

Practice Model

The Medication Management Outcome Monitor and the Medication Assessment Tool have been combined into a single assessment tool the "Long Term Care/Medication Outcome Manager (LTC-MOM)." A copy is located in Appendix A of the original guideline document. It is to be used for monitoring and evaluating the usefulness of the Medication Management evidence-based practice guideline in improving outcomes of those individuals residing in nursing home facilities. The LTC-MOM will be completed using the current Medication Administration Record (MAR), resident's chart, Minimum Data Set (MDS), and history and physical examination. The schedule begins with admission and is repeated at 4 month intervals or with an acute change in condition. Medication review is an ongoing process, but especially pertinent at admission, transfer, transition, condition or symptom change, deterioration, function change, new medications, diet changes, or irregularity identification by pharmacist. This tool will help to answer the questions: should a change be made, the medication continued, and/or discontinued. Utilizing a tool to identify and trigger changes in plans of care has been supported by the Institute of Healthcare Improvement.

The following background information will be recorded at each visit to assist in determining if outcomes are met:

- Results of lab studies since last exam
- Total number of scheduled and prn (as needed) medications

- Emergency room (ER) visits/hospitalizations related to adverse drug reactions (ADRs)
- New medications
- Discontinued medications
- Resident/Family Goals of Care related to medications

At least annually:

- Review and update the Cockcroft Gault formula.
- Complete Blood Count, Thyroid Stimulating Hormone (TSH), and Comprehensive Metabolic Profile including liver and kidney functions tests.

Outcome 1: Maintain Functional Status

Assessment

Functional health will be measured by the MDS-ADL 3.0 Scale and results of the clinician's history and physical examination.

MDS

The use of the MDS-ADL scale has repeatedly been found capable of measuring both decline and rate of decline in vulnerable populations with moderate to moderate/high validity and reliability. The current version of the Minimum Data Set (MDS) is 3.0 and was put into practice in 2010. This comprehensive mandated assessment tool is used by nursing homes to assess the resident's functional, medical, psychosocial, and cognitive status. Consistent with former versions, it must be completed within 14 days of admission and updated at quarterly intervals or with significant status changes. Data are collected by trained professionals (e.g. nurses, social workers, and therapists), and each MDS item has its own explicit definition and coding convention. The range of the MDS activities of daily living (ADL) Self performance scale during the designated period is from 0 (independent) to 4 (total dependence) for activities that have occurred three or more times, 7 if the activity occurred 1 or 2 times, or 8 if the activity did not occur at all. The MDS-ADL 3.0 Scale has 10 items including bed mobility, transfer, walk in room and corridor, locomotion on and off unit, dressing, eating, toilet use, and personal hygiene. The examiner will sum and record the individual item scores from the most recent MDS-ADL Scale. Higher scores denote greater dependence. (*Evidence Grade = C-1*)

Assessment Action

If declines are noted on either the MDS 3.0 self performance activities of daily living scale (total possible score 0 – 80) or the history and physical examination, review of medication regimen with adjustment of dosages or discontinuation as indicated. (*Evidence Grade = D*)

Expected Outcome

As a result of following the medication management guideline, residents will not have a decrease in functional status related to their medication regimen. (*Evidence Grade = C-1*)

Outcome 2: Decrease Polypharmacy

Assessment

Nurse practitioners, physician assistants, and or physicians will review and record the total number of routine and as needed medications at each periodic visit. The creatinine clearance level will be calculated on admission, with changes in condition, and at least annually. (*Evidence Grade = C-1*)

Assessment Action

The Cockcroft Gault Score (see Appendix B in the original guideline document) and laboratory results will be used to determine dosing. Major Drug Guides and prescribing references provide medication dosing guidelines for initial as well as individualized suggestions based on disease severity and therapeutic responses. (*Evidence Grade = C-1*)

Expected Outcome

- The number of scheduled and as needed (prn) medications will not increase and medications will be congruent with diagnoses with no duplications present. Goal: 9 or fewer scheduled medications with number of administrations no more than 3 different times daily. Example; with 7 different meds: 4 given one time daily and 3 twice daily. The regimen could be 5 meds at 9 am, 2 at noon, and 3 at hour of sleep.
- Medication doses will be appropriate for age/renal/hepatic status of older adults. (*Evidence Grade = C-1*)

Outcome 3: Avoid Adverse Drug Reactions (ADRs)

Assessment

The resident's record and physical exam will be used to verify adverse drug reactions occurring in the time from the last periodic exam. (*Evidence Grade = D*)

Assessment Action

- Medications identified as resulting in adverse drug reactions including reactions or ER/hospitalizations will be adjusted or discontinued based on overall plan of care. (*Evidence Grade = C-1*)
- Monitoring guidelines will be individualized and in place for high risk medications: insulin, digoxin, warfarin, anti-psychotics. (*Evidence Grade = C-1*)

Expected Outcome

No adverse drug reactions, no drugs ordered to treat side effects or adverse reactions, and no hospitalizations or ER visits resulting from adverse drug reactions. (*Evidence Grade = C-1*)

Outcome 4: Decrease Inappropriate Prescribing

Assessment

The current MAR will be compared to the Beers list, Centers for Medicare & Medicaid Services (CMS) guidelines, and the facility pharmacist's recommendations to ascertain appropriateness of current medication regimen. (*Evidence Grade = B-1*)

Assessment Action

- Medications found to be in conflict with the Beers list, CMS guidelines, and/or facility pharmacist's recommendations should be discontinued or adjusted unless compelling evidence exists for continuance. (*Evidence Grade = B-1*)
- The Beers list, CMS guidelines, and/or facility pharmacist's recommendations should be used when planning medication initiation, reviewing established medication regimens, or making changes in the medication regimen. (*Evidence Grade = C-1*)

Expected Outcome

No inappropriate prescribing as evidenced by the medication regimen which contains no drugs in conflict with the Beers lists, CMS guidelines, and/or pharmacist recommendations. (*Evidence Grade = C-1*)

Definitions:

Rating Scheme for Strength of Evidence

A1 = Evidence from well-designed meta-analysis or well done systematic review with results that consistently support a specific action (e.g., assessment, intervention, or treatment)

A2 = Evidence from one or more randomized controlled trials with consistent results

B1 = Evidence from a high quality evidence-based practice guideline

B2 = Evidence from one or more quasi-experimental studies with consistent results

C1 = Evidence from observational studies with consistent results (e.g., correlational descriptive studies)

C2 = Inconsistent evidence from observational studies or controlled trials

D = Evidence from expert opinion, multiple case reports, or national consensus reports

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Chronic and acute disorders requiring treatment with medications

Guideline Category

Evaluation

Management

Clinical Specialty

Geriatrics

Nursing

Pharmacology

Intended Users

Advanced Practice Nurses

Nurses

Pharmacists

Physician Assistants

Physicians

Guideline Objective(s)

To improve medication management practices for older adults who reside in long term care facilities

Target Population

Adults age 65 years and older who reside in long term care facilities

Interventions and Practices Considered

1. Measurement of functional health using the Minimum Data Set-Activities of Daily Living (MDS-ADL) 3.0 Scale and results of the clinician's history and physical examination
2. Review and recording of the total number of routine and as needed medications at each periodic visit
3. Calculation of creatinine clearance on admission, with changes in condition, and at least annually
4. Use of the Cockcroft Gault Score and laboratory results to determine drug dosing
5. Verification of adverse drug reactions
6. Adjustment or discontinuation of medications based on adverse reactions or emergency room/hospital admission
7. Individualized monitoring guidelines for high risk medications (insulin, digoxin, warfarin, anti-psychotics)
8. Comparison of the current Medication Administration Record (MAR) to the Beers list, Centers for Medicare and Medicaid Services (CMS) guidelines, and the facility pharmacist's recommendations to ascertain appropriateness

Major Outcomes Considered

- Incidence of inappropriate prescribing of medications
- Incidence of polypharmacy
- Adverse events of medications
- Functional status of older adults

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Databases

Searches were performed using electronic database searching and hand searching of journals, national guidelines, and professional organizations. Databases included CINAHL and PubMed. The reference list from the 2004 Evidence–Based Protocol: Improving Medication Management for Older Adults was also perused for references that were classic and/or applicable despite being dated to the current protocol's purpose.

Keywords

The following search terms were used: *medication management, functional status, inappropriate prescribing, adverse events, polypharmacy*, and *palliative care* in combination with both *long term care* and *nursing home*.

Inclusion and Exclusion Criteria

The database searches were limited to year of publication (2003-present), research; peer reviewed, and English only articles.

Number of Source Documents

Number of documents identified: 375

Number of documents used: 118

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

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C1 = Evidence from observational studies with consistent results (e.g., correlational descriptive studies)

C2 = Inconsistent evidence from observational studies or controlled trials

D = Evidence from expert opinion, multiple case reports, or national consensus reports

Methods Used to Analyze the Evidence

Systematic Review

Description of the Methods Used to Analyze the Evidence

Not stated

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Experts in the subject of the proposed guideline are selected by the Research Translation and Dissemination Core to examine available research and write the guideline. Authors are given guidelines for performance of the systematic review of the evidence and in critiquing and weighing the strength of evidence.

Rating Scheme for the Strength of the Recommendations

Not applicable

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

The guideline underwent internal review at the John A. Hartford Foundation Center of Geriatric Nursing Excellence (HCGNE), and was also reviewed by (two) external expert content reviewers (see Contact Resources page in the original guideline document).

This guideline was reviewed by experts knowledgeable of research on medication management for older adult clients. The reviewers suggested additional evidence for selected actions, inclusion of some additional practice recommendations, and changes in the guideline presentation to enhance its clinical utility.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Reduced risk for medication mismanagement

Subgroups Most Likely to Benefit

Older adults in the following situations are at risk for medication mismanagement and thus likely to benefit from use of this evidence-based protocol:

- Polypharmacy
- Multiple providers
- Multiple or recent transfers between long term and acute care facilities
- Complicated medication regimens
- Unclear goals

Potential Harms

Not stated

Implementation of the Guideline

Description of Implementation Strategy

The "Evaluation of Process Outcomes" section and the appendices of the original document contain a complete description of implementation strategies.

Implementation Tools

Audit Criteria/Indicators

Chart Documentation/Checklists/Forms

Quick Reference Guides/Physician Guides

Resources

Staff Training/Competency Material

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Patient-centeredness

Safety

Identifying Information and Availability

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2004 Oct (revised 2012 May)

Guideline Developer(s)

University of Iowa College of Nursing, John A. Hartford Foundation Center of Geriatric Nursing Excellence - Academic Institution

Source(s) of Funding

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Guideline Committee

Not stated

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Financial Disclosures/Conflicts of Interest

Not stated

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Guideline Availability

Electronic copies: Available for purchase on CD-ROM through The University of Iowa College of Nursing's John A. Hartford Center for Geriatric Excellence Web site .

Print copies: Available for purchase through The University of Iowa College of Nursing's John A. Hartford Center for Geriatric Excellence Web site .

Availability of Companion Documents

The following is available:

- Improving medication management for older adult clients. Quick reference guide. Iowa City (IA): University of Iowa College of Nursing, John A. Hartford Foundation Center of Geriatric Nursing Excellence; 2012.

Quick reference guide accompanies the full-text guideline, which is available from the University of Iowa College of Nursing, John A. Hartford Foundation Center of Geriatric Nursing Excellence, 4118 Westlawn, Iowa City, IA 52242. For more information, please see the University of Iowa College of Nursing, John A. Hartford Foundation Center of Geriatric Nursing Excellence Web site .

The original guideline document includes a variety of implementation tools, including: the Cockcroft-Gault Formula, process indicators (Process Evaluation Monitor, Medication Knowledge Assessment Test), and outcome indicators (Long-Term Care Medication Outcomes Monitor [LTC-MOM]).

Patient Resources

None available

NGC Status

This National Guideline Clearinghouse (NGC) summary was completed by ECRI on February 7, 2005. The information was verified by the guideline developer on March 4, 2005. This NGC summary was updated by ECRI Institute on August 1, 2012.

Copyright Statement

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